

Press Release

54/2018

Urgent appeal for more marine and climate protection Marine scientists publish "Kiel Declaration"

September 7, 2018 / Kiel. This week, more than 300 scientists from 33 countries met in Kiel at an international conference to discuss the decline of oxygen in the ocean, the causes and the consequences. At the conclusion of the conference, the scientists now published a haunting appeal, the "Kiel Declaration", in which they call urgently for more marine and climate protection.

The numbers are alarming: over the past 50 years, oxygen has decreased by two percent in the global ocean. The volume of oxygen-depleted waters, has grown more than fourfold. The main reasons are the increasing global warming, but also the over-fertilization of the oceans. In the long term, these changes will not only jeopardize life in large parts of the world's oceans, but also feedbacks to the atmosphere are expected, as greenhouse gases such as nitrous oxide and methane form in oxygen-free water.

Scientists from all parts of the world who convened in Kiel for a conference organized by the Collaborative Research Centre 754 (SFB 754) "Climate and Biogeochemical Interactions in the Tropical Ocean" agreed that this problem must be immediately and urgently addressed to develop solutions in order to stop the oxygen loss as soon as possible. Therefore, they unanimously adopted an appeal for more marine and climate protection, the "Kiel Declaration".

"The ocean is in a global crisis", says Prof. Dr. Andreas Oschlies spokesperson of the SFB 754 from the GEOMAR Helmholtz Centre for Ocean Research Kiel. "For the very productive areas of the world's ocean off Peru and West Africa, the supply of nutrients and oxygen is of vital importance", Oschlies continues. But particularly in these areas the oxygen content has decreased significantly in the past 50 years. In addition, these coastal areas are particularly affected by over-fertilization, which leads to algae blooms and ultimately to increased oxygen depletion through degradation of biomass.

"Comparisons between observational data and the results of complex numerical models show that even the best simulations underestimate the changes which are already observed significantly", Prof. Oschlies explains. "Thus, nature is changing faster than we expected". Therefore, Oschlies and the more than 300 participants of the conference and the Global Ocean Oxygen Network (GO₂NE) consider it important to publicize these changes and also to advocate increased ocean observations, leading to a better understanding of ongoing rapid changes and eventually to more robust predictions.

In the document, they call for more international efforts to sharpen global awareness of oxygen depletion, taking immediate and decisive action to limit marine pollution and in particular the excessive nutrient input into the ocean and to limit global warming by decisive climate change mitigation actions.

The researchers refer to the Paris Climate Change Agreement and the United Nations Sustainable Development Goal 14 for the sustainable development of the seas and oceans. "We still have the chance to avoid strong and irreversible effects of climate change, pollution and overuse of the oceans through rethinking and immediate action," says Prof. Oschlies. "But we are quickly running out of time! That's why we want to set a clear and strong signal with the 'Kiel Declaration' in order to stop the oxygen depletion of the ocean and thus, preserve the largest ecosystems on this planet".

Note:

The Collaborative Research Centre 754 (SFB 754) "Climate and Biogeochemical Interactions in the Tropical Ocean" was established in January 2008 as cooperation between Kiel University and the GEOMAR Helmholtz Centre for Ocean Research Kiel. The SFB 754 investigates changes in ocean oxygen content, their potential impact on oxygen minimum zones and the consequences for the global interaction of the climate and biogeochemistry of the tropical ocean. The SFB 754 is funded by the German Research Foundation (DFG) and is in its third phase (2016-2019).

Links:

https://www.geomar.de/uploads/media/Kiel_declaration_fin.pdf Text der „Kiel Declaration“
<http://www.uni-kiel.de> Christian-Albrechts-Universität zu Kiel
<https://www.geomar.de> Das GEOMAR Helmholtz-Zentrum für Ozeanforschung Kiel

Images:

At www.geomar.de/n6076 images are available for download.

Contact:

Dr. Andreas Villwock (GEOMAR, Communication and Media), Tel.: 0431/600-2802,
presse@geomar.de